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SOCIETY OF ARTS.

FRIDAY, APRIL 22nd, 1853.

SEVENTEENTH ORDINARY MEETING,

Wednesday, April 20th, 1853.

THE Seventeenth Ordinary Meeting of the Society was held on Wednesday, the 20th instant, John Scott Russell, Esq., Vice-President, in the chair.

The following were elected Members:

Bastow, Robert, The Mount, Wilmington, Kent.
Belshaw, J., Adelaide-place, London-bridge.
Blair, Harrison, Kearsley, near Bolton.
Chantrell, William, Wirksworth.
Child, William Dimsdale, Forty-hill, Enfield, Middlesex.
Donkin, Thomas, Hanover-park, Peckham.
Foster, John, 16, Wigmore-street.
Goolden, Charles, M.A., 7, South-square, Gray's-inn.
Kilburn, William Edward, 234, Regent-street.
Rideout, William, Farnworth, near Bolton.
Rushton, Thomas Lever, Bolton, Lancashire.
Young, George, Leeds.

and the name of one candidate for membership was read.

Several communications which have been received in competition for one of the Society's premiums: "83. For the invention of a good and cheap lock, combining strength and great security from fraudulent attempts; cheapness, freedom from disarrangement by dirt, and requiring only a small key," were read.

I. "On Mr. E. B. Denison's new lock," by Messrs. S. Mordan and Co.

Mr. E. B. Denison explained the construction of this lock, of which two specimens had been sent to the Society for exhibition by Messrs. S. Mordan and Co., the makers of them. One of these specimens was a large lock for iron safes, and the other a drawer lock of the usual size. The following is the description which had been sent in by Messrs. Mordan:

This lock is submitted to the Society as complying with the requisition in their premium list of this year. It will be evident from inspection that both the tumblers and the "stump" of the bolt have greater strength and means of resistance to force, than in other locks of the same size; while the key of this lock, which is suitable for safes of the largest size, and capable of shooting any number of bolts, only weighs one-third of an ounce.

This smallness of the key in proportion to the size of the lock is not obtained, as in some other safe-locks, by diminishing the size and strength of the tumblers, but by giving the key nothing to do except raising the tumblers without the resistance of any springs. The bolt is shot by the handle, and the lock is thereby also completely locked *without using the key at all*, and the key is only required to raise the tumblers again to such a position that the handle can open the lock. Whereas in the class of safe-locks above referred to, the ultimate security is only that due to the strength and security of a small lock which is locked into the main bolt by a key made after it is shot by the handle. This mode of locking a door without using a key may be a great convenience to those who are obliged to leave their places of business before the time of locking up, and who are unwilling to leave their keys with clerks whom they might readily trust to lock up the books, and other things, by merely turning a handle; it also removes all temptation to leave the key in the lock, which sometimes exposes it to the risk of being stolen, or having an impression taken. At the same time it is free from the objections which apply to spring or self-shutting locks, though it possesses all their advantages.

We believe that this lock is quite as secure from picking as the famous American lock, which is much more complicated and expensive, and requires a very large key. The mode of picking, which was described in the *Encyclopædia Britannica* some years ago, but has lately acquired more celebrity from the performances of Mr. Hobbs, is here prevented, by rendering it impossible to feel or produce any pressure of the bolt on the tumblers, so long as the key, or any other instrument is in the keyhole. For when the key is pushed into the lock against the curtain, which is held up by a spring behind it, a square plug at the back of the curtain descends into a notch in the bolt, and so prevents it from being moved at all; and it is so constructed that when the curtain-plug is in this notch the stump does not quite reach the ends of the tumblers, and therefore, although it is perfectly easy to raise the tumblers by any key or picker, their bearing against the stump cannot be felt; and, on the other hand, if the bolt be drawn back by the handle, so as to bring the stump against the tumblers, then the curtain-plug cannot be pushed into the notch in the bolt, and the keyhole remains closed against the introduction of any instrument.

It has been stated that most tumbler locks, with keyholes of the ordinary size, can also be opened, by observing and measuring through the keyhole the distance from the drill-pin, or centre of the keyhole, at which the key begins to leave a mark on the tumblers. This is prevented here by the smallness and depth of the keyhole, both of which render it impossible to get a sight of the tumblers at the point where the key first touches them. In this way, therefore, the smallness of the key adds to the security of the lock, besides the more obvious advantage of convenience of carrying in the pocket, without the temptation to leave it out on account of its bulk; and it also renders it impossible to introduce any instrument of sufficient strength to force open by sheer violence a lock of this strength and construction. By way of security against drilling a false keyhole into the lock, there may, of course, be a thick case-hardened or chilled cast-iron plate between the lock and the front of the door; and it will be observed that nothing would be gained by drilling into the curtain, as you would only in time come out through the square plug into the inside of the door, and not into the inside of the lock.

As a proof of the indifference of this lock to dirt, as well as its simplicity, we have left the work as rough as possible. The tumblers are merely short lengths of hoop iron, and both the tumblers, and the friction-plates between them, are left as they come from the roller. In fact, instead of friction being, as in other tumbler locks, a thing to be counteracted as far as possible, the friction in this lock is an advantage, as it helps to keep the tumblers steady, in whatever position they are required to assume, either by the key or the handle ; and for this purpose one or more of the separating plates is also bent a little, so as to make them always act as friction-springs on the tumblers. In tumbler locks of the usual construction, if a drop of thick oil, or any other substance, gets between any tumbler and the adjacent tumbler, or plate, it may easily overcome the power of the spring to depress the tumblers, and the lock then comes to a "dead lock," as there are no means of introducing a substitute for the power of the spring, so as to bring down the sticking tumbler ; or if a spring gets broken, which occasionally happens where they are allowed to get rusty, the same result takes place ; whereas, in this lock, there are no tumbler springs, and there is always the power of the handle to bring down the tumblers. It may be observed, also, that the curtain having no opening at all in it, keeps the key-hole closed against dirt, and the corroding effects of a damp or smoky atmosphere.

We are prepared to make and sell locks of this kind, of the large size here exhibited, and with eight tumblers, for 42*s*., which is cheaper than detector locks of even less size and the same number of tumblers, without any special provisions to prevent the mode of picking now so well known, and a great deal cheaper than detector locks which profess to contain such provisions, whether effectual or not. Locks of smaller size will be in the same proportion as to price ; the one we send we can sell for 9*s*. ; and if they should be manufactured on a large scale, we should be able to reduce the price still more, as the lock contains nothing requiring peculiar skill in the workman. We send also a small drawer lock of the same construction, in order to show that the invention is equally applicable to cabinet locks as to safes, although the advantages of the strength of the lock and the smallness of the key are of course more striking in large locks.

Mr. Denison stated that the lock is not patented, as he agrees with the many eminent persons who consider patents an obstruction to science.

II. "Description of Mr. Andrews' Snail Wheel Lock," by Messrs. S. Mordan and Co.

This communication is also accompanied by a specimen which, it is considered, satisfies all the prescribed conditions, excepting as regards the smallness of the key, which is of the usual size. Although this last condition is not exactly complied with, the lock is so perfect in every other respect, that we think the Society of Arts may be disposed to waive this objection. We are of opinion that it is impracticable to make a very small key to a good and secure lock, unless a *double* action be introduced ; for in all *single* action locks the key must be solid, and strong enough to raise the tumblers and shoot the bolt ; on the other hand, a double action lock is incompatible with simplicity and cheapness.

The great recommendations of this lock are : its great security from picking ; its simplicity and consequent cheapness ; its great originality ; its unusual strength and durability ; its non-liability to get out of order, from dirt or any other cause ; the impossibility of making observations or measurements through the key-hole, with a view to making a duplicate key; its easy adaptability to any purpose for which locks are required.

As regards its security, it will be observed that the tumblers are circular, revolving on a pivot, instead of being oblong, which is the usual form ; consequently, it is impossible to feel the pressure of the bolt upon them, as in nearly all existing tumbler locks ; the oblong tumblers can only have a limited action in a small segment of a circle, and are therefore susceptible of a comparatively small number of changes, whereas the changes produced by the revolutions of circular tumblers are almost innumerable. From the extremely novel construction and arrangement of this lock, it is self-evident that no sight of the tumblers can be obtained which would in any way assist an expert thief to make an instrument to open it. We believe this lock to be as secure as any existing lock (without excepting the very expensive American lock of Hobbs), although it is the most moderate in price. Its simplicity and consequent cheapness is obtained by the absence of all springs in connection with the tumblers ; by the original form of the tumblers, which enables us to stamp them out at the press from thin sheet iron ; by the simple and direct action of the tumblers on the bolt ; and generally from its being quite unnecessary to highly finish any of the parts, and the great ease with which the whole is adjusted. These exclusive advantages render this lock the cheapest of all perfectly secure locks.

The strength and durability of this lock equal its great security and simplicity ; for the same causes which produce the latter advantages are precisely those calculated to prŏduce the former, viz., the shape of the tumblers, the direct action of the lock, the absence of springs, high finish, and all intermediate delicate mechanism, leaving only the solid and strong parts to bear the wear and tear of years. For the same reasons, we scarcely see the possibility of this lock getting out of order from dirt on any other cause. One great recommendation of this lock consists in the perfect capability with which it can be adapted to any purpose, from the largest iron door or strong room down to the most delicate cabinet work ; it can be made to any size, pattern, or thickness, an advantage not possessed by many secure locks.

Another recommendation is, that if the key should be lost, the lock can be altered in a few minutes (at little or no expense), by simply changing the relative position of one or more of the circular tumblers.

We are prepared to make and sell locks of this kind, of the size here exhibited, and with eight tumblers, for 30*s*., which we believe is much cheaper than any lock in the market possessing anything like equal pretensions. Small cabinet locks will be in the same proportion.

The Chairman referred to the discussion on locks which had arisen last year, and said that it was then generally acknowledged that there was greater complexity in their formation than was desirable. The American lock was undoubtedly good; but it was very expensive. It also depended on the exhaustion of chances for being picked; and might, by perseverance, be "tickled" and opened. So far as he could judge Mr. Denison's lock did possess, in a considerable degree, some of the qualifications that were deemed desirable. It appeared simple and cheap, and also difficult to pick; but whether it would prove absolutely unpickable remained to be seen. In fortifying cities, the misfortune was that, no sooner did some clever individual invent what appeared a perfect defence, than some other person, still cleverer, invented a means of attack which rendered the fortification quite pregnable. Mr. Denison's invention was for the purpose of fortifying what might be termed the fortresses of wealth. He hoped if there were any gentlemen present familiar with the mechanical details, they would explain where Mr. Denison's fortification might be attacked, and how they would carry on the siege.

Mr. Hensman asked if Mr. Denison's lock possessed any advantage over the ordinary spring locks, so far as the possibility of locking the door and leaving the key inside was concerned?

Mr. Denison said it was possible, if proper care were not taken, to leave the key behind. For instance a person might put the key in his coat pocket, and in changing his coat leave the key there, and lock the door by means of the handle.

Mr. Hobbs inquired what space was left between the ends of the tumblers and the stump; and whether the curtain could be pressed back so far as to allow of the tumblers being felt, without the stump passing into the jaws of the tumblers?

Mr. Denison replied, just sufficient to clear them; but it depended on the delicacy of the work. In the lock exhibited, it was one-twentieth of an inch.

Mr. Hobbs said he saw nothing in Mr. Denison's invention which was not common to many other locks. The plan of turning the lock by means of the handle was common. Small keys for strong locks were also common; and in the French Department of the Great Exhibition, there was a lock exhibited in which six large bolts were shot with a key no larger than a watch-key; but he thought the smaller the key the greater was the chance of imitating it. In regard to cheapness, he did not see anything in it to warrant its being made one penny cheaper than many similar locks; and in reference to durability, he might mention that the friction of a rough piece of metal against a smooth surface, would be very destructive. The Chairman had spoken of the cost of American locks; and as this had been frequently stated in the public prints, and seemed to be very generally believed, he would take this opportunity of stating that such belief or opinion was erroneous, as American locks could be made as cheap as any good tumbler lock made in England. They could make a secure lock with a solid key, as cheap as any one; but if a lock with changeable bits was required, the additional security which it afforded must be paid for. He referred to the mode pursued in England of manufacturing locks, and said, that by the old process a man could only make *six* dozen tumblers in a day; whereas with proper tools he ought to be able to make *sixty* dozen. The locksmiths of this country made bad locks at a high price. The large boss on the keyhole was a great objection if it were intended for an iron safe, as it would project beyond the face of the door, and so afford facility for the use of a plug of steel and a swedge, by which a force of four tons might be brought to bear upon the lock. The keyhole ought to be flush with the door. With a small key, the surface being less the bits could not be so numerous, or changed so frequently, and hence the number of locks of any specific size would be diminished. In regard to the second lock, it was the invention of an American, Mr. Andrews, who had patented it twelve years ago. A few had been made, but they were not found to work, and had not come into general use. Another objection to Mr. Denison's was, the two processes required to unlock it. He had always found that the public preferred something very easy and simple of manufacture, and every lock requiring more processes than common locks would be objectionable; although some bankers and amateurs did not object to one with two or three motions.

The Chairman remarked that he thought the two processes of Mr. Denison's lock simple enough, as in ordinary locks both the key and the handle had to be turned.

Mr. Hobbs said that if, after unlocking, the door was closed, it again required the two processes, instead of simply turning the handle as in ordinary cases.

Mr. Denison remarked, in reference to Mr. Hobbs's statement, that there were strong locks, with small keys, already in existence, that these locks either required great delicacy of finish, or they were merely small locks fastening into the bolts, which bolts were shot by the handle, and therefore the security they afforded was only that due to the small lock. As to cheapness, he himself could say nothing about it, except that Mr. Mordan had fixed the price, and he thought him a competent judge in that matter; he had stated it to be lower than that of ordinary tumbler locks of the same size. He had nothing to say against American locks, which were in many respects admirable and ingenious. He quite agreed with Mr. Hobbs in his remarks about the mode in which English locksmiths conducted their manufacture, and thought they were very far behind-hand, and would be superseded by their American brethren, unless they introduced the improved systems of manufacture adopted by them in this, as well as in several other branches of trade. The size of his key had been stated to be an objection, as it was supposed that there could not be so many changes made in the bits. The lightness of the key was not, however, produced by shortening the length of the bits, but by reducing their thickness. With regard to the objection which Mr. Hobbs had made to the projection of the boss, he would merely observe that that did not at all affect the principle of the lock, and that there would be no difficulty in obviating it in future.

Mr. Mordan said that as he did not consider Mr. Andrews's lock fairly before the meeting, as there were no models or diagrams to illustrate it, he should say nothing of it, except to ask Mr. Hobbs if it were not true that the United States Government had applied it to the mail-bags?

Mr. Hobbs stated that the first lock made by Mr. Andrews was a bank lock, and that that was picked. He then made some improvements in it, and this was also picked. He then made a snail lock, which was applied to the mail-bags; but two years since, on the renewal of the lock contract, it had been taken out of Mr. Andrews's hands, as a superior lock had been produced by other parties.

Mr. Winkworth referred to the principle of Patents, to which he entirely objected, but did not then feel at liberty to open up the question. He was glad to learn that Mr. Denison had not taken out a patent for his locks.

The Chairman said in regard to the Patent Laws, he must plead guilty to being the owner of two or three patents; but he fully agreed with Earl Granville, the Philosophical Jury of the Great Exhibition, Colonel Sir William Reid, Sir William Cubitt, Mr. Brunel, Mr. Winkworth, Mr. Denison, and other gentlemen who had been named, that it would be an advantage to the ingenuity of this and every country if all property in patents were annihilated; and he believed that such a consummation was rapidly approaching. The position of inventors at present compelled them to patent their plans, not so much to prevent others using them as to secure to themselves the right to do so; for if they neglected to take out a patent for an invention, perhaps the next day some one else would, and they might be prevented from using their own discovery. Patents were multiplying so rapidly that they would shortly be of no service. Their great number would prevent them being of any use as advertisements, and the same cause would destroy the prestige at present attaching to them. The time was coming when inventions must stand on their own merits; and those most suited to the wants of the public, and brought forward with the most wisdom, would carry the day. He concluded by moving a vote of thanks to Mr. Denison and Mr. Mordan for the papers which had been read.

It was announced that at the next meeting, on April 27th, a paper would be read by the Very Reverend the Dean of Hereford, "On some Proofs of a Self-supporting System of Education."

EAST INDIAN EXHIBITION.

Our members will be glad to hear that Her Majesty the Queen has been graciously pleased to comply with the request of the Council, at the suggestion of the East Indian Committee, to permit a selection of valuable productions of Eastern origin to be exhibited in Dublin; and directions have been given for them to be forwarded immediately. We have also to announce, as the result of similar applications, that the East India Company and the Asiatic Society have placed at the disposal of the Committee a large selection of articles from their museums, which cannot fail to prove both attractive and instructive to artizans and manufacturers.

The result of other applications to public bodies and private individuals will be communicated as soon as known. In the meantime the Indian Committee have to acknowledge the receipt of large contributions of Eastern design and manufacture from Mr. J. Reeves, of Clapham; Mr. G. Bridge, of Shepherd's Bush; and other gentlemen. Messrs. Hewitt and Co., of Fenchurch-street, have already shipped for the Exhibition an extensive assortment of porcelain, cut ivory, cabinet-work, pictures, embroidery, &c.; the greater part of which has recently arrived from China, and are quite new to Europe.

In the Journal of March 18th, we announced the successful result of the visit to the Hague of Mr. Winkworth, the Chairman of this Committee, and of Mr. Roney, the Secretary to the "Great Industrial Exhibition of 1853." The Dutch Government has since forwarded a catalogue to Dublin of the articles of Eastern interest therein referred to, and which are now on their way to Ireland. They are still more extensive in variety and importance than was originally contemplated.

The Committee have received great assistance from Mr. John Deane, the Assistant-Secretary to the Dublin Exhibition.

ESSAYS ON PORTUGAL.

About the period of the termination of the Great Exhibition, a Premium of fifty guineas was offered by Mr. B. Oliveira, M.P., F.R.S., for the best Essay on Portugal, to embrace the following points:—The Capabilities of that Country for Consuming the Manufactures of Great Britain; the Effect of the High Duties on the Wines of Portugal Imported into Great Britain; the Advantages to be obtained by a Reciprocal Reduction of Import Duties; the Effect of Railroads as a Means of Developing the Resources of that Kingdom, &c.

The following gentlemen having consented to act as judges—John Peter Gassiot, Esq., F.R.S., Col. W. H. Sykes, F.R.S., John M'Gregor, Esq., M.P., J. O. Halliwell, Esq., F.R.S., and Gordon W. Gyll, Esq.—recently met to come to a decision upon the merits of the four Essays which had been sent in in competition.

No. 1, by *Daniel da Silva Pereira e Cunha, of Fundão, Portugal*, advocates the promotion of the British connection by every practicable means, consistent with the true interests of Portugal.

	Dols.	Cents.
Imports from Great Britain in 1848 .	6,425,516	714
Exports to do do .	4,891,773	532

He reprehends the use of so large a quantity of French productions, France taking in return so small a portion of those of Portugal.

	Dols.	Cents.
Imports from France in 1848 . . .	402,152	505
Exports to do do . . .	35,057	522

He recommends the reciprocal reduction on all imports by Great Britain and Portugal of their respective productions.

No. 2, by *William Bell, Phil. D., London*, alludes to the early English relation with Portugal; the Methuen Treaty, and Pombal's attempt to create manufactures in Portugal—the error of M'Gregor; it recommends the abolishing of saint-days, and the establishment of railroads; it explains that Portugal has only one port (Lisbon) fit to receive large vessels; it refers to the Portuguese articles at the Exhibition in London, and to the effect which would arise by a reduction in the wine duties, which ought not to exceed 1*s.* or 2*s.* per gallon; it points out the policy of the Government not interfering with the private traders, and that it is the interest of Portugal to attend to the cultivation of the soil in preference to manufactures. This treatise does not give any statistics as to the capabilities of Portugal. It argues generally on the advantages likely to arise from a reduction of duties in England for the encouragement of a consumption of wines, and alludes to the evidence before the Committee.

No. 3, by *Dr. Whitehead, London*. The author of this treatise considers that Portugal would prosper if her lands were let to tenants. English farmers pay, in rent and tithes, 40,000,000*l.* per annum, and yet the produce of their industry forms a large portion of the wealth of the country. He casually alludes to the resources of Portugal—agriculture; and says that free trade, understood as such, would not be of any benefit, but that facilities should be granted by removing those restrictions to trade with such nations who would reciprocate, by taking her productions of wine, corn, and oil.

No. 4, by *Joseph James Forrester, of Oporto and London*, is by far the most elaborate treatise, and is replete with statistical information, entering fully, under distinct heads or chapters, into most of the points asked for in Mr. Oliveira's suggestion. A considerable portion is devoted to the former reduction of the Wine Company, which would now require to be modified to meet the circumstances arising from the recent decree of the Portuguese Government.

The judges decided that the Premium should be awarded to the last-named gentleman; but as all the other treatises had considerable merit, they suggested that Mr. Oliveira should offer to each gentleman a medal in commemoration of his labour, and in testimony of their appreciation of the merits of their works. This suggestion Mr. Oliveira intends to act upon.

COLONIAL POSTAGE.

INTERVIEW WITH THE PRIME MINISTER.

On Saturday a very numerous and influential Deputation of members of the Colonial and International Postage Association, waited upon the Earl of Aberdeen, at his official residence, Downing-street.

The Deputation was composed of the following gentlemen:—

Thomson Hankey, Esq.

Council.

George Moffatt, Esq., M.P.
Sir John Burgoyne, G.C.B.
Elihu Burritt, Esq.
Rt.Hn.Milner Gibson, M.P.
Colonel Sykes, F.R.S.
Matthew Uzielli, Esq.

City Committee.

T. H. Brooking, Esq.
Andrew Caldecott, Esq.
R. W. Crawford, Esq.
John Dillon, Esq.
Sir James Duke, Bt., M.P.
Alexander Gillespie, Esq.
John Diston Powles, Esq.
T. A. Mitchell, Esq., M.P.
Thomas J. Hankey, Esq.
E. A. Moriarty, Esq.
Saml. Gregson, Esq., M.P.

Deputies from—

Blackburn Commercial Association.
Bradford Chamber of Commerce.
Bristol Society of Merchant Venturers.
Bristol Chamber of Commerce.
Edinburgh Chamber of Commerce.
Manchester Commercial Association.
Manchester Chamber of Commerce.
Newcastle Chamber of Commerce.
Newcastle Commercial Association.
Hull Chamber of Commerce.

Members of Parliament.

Sir James Anderson.
Viscount Barrington.
Joseph Brotherton, Esq.
Henry Austin Bruce, Esq.
William Brown, Esq.
John Cheetham, Esq.
S. Christey, Esq.
Wm. H. F. Cogan, Esq.
Charles Cowan, Esq.
Frank Crossley, Esq.
William Evans, Esq.
W. F. Fagan, Esq.
Charles Foster, Esq.
M. J. Feilden, Esq.
Sir George Goodman.
Hon F. Leveson Gower.
George Hadfield, Esq.
Charles Hindley, Esq.
Joseph Hume, Esq.
James Kershaw, Esq.
William Kirk, Esq.
W. H. G. Langton, Esq.
W. Laslett, Esq.
Hon. Cecil Lawless.
G. Cornewall Legh, Esq.
John Macgregor, Esq.
W. Marshall, Esq.
Dr. W. Michell.
Robert Milligan, Esq.
J. P. Murrough, Esq.
B. Oliveira, Esq.
Robert Palmer, Esq.
Francis Pigott, Esq.
James Pilkington, Esq.
Thomas Phinn, Esq.
Nicholas Power, Esq.
J. Lewis Ricardo, Esq.
Osman Ricardo, Esq.
Baron Lionel de Rothschild.
Captain Scobell.
Sir George Strickland.
Charles Turner, Esq.
Right Hon. Henry Tufnell.
H. W. Wickham, Esq.

There were also present the following Local Honorary Secretaries of the Association, and other gentlemen:

Mr. James Hassell, from Bristol.
Mr. James Bush, from Bristol.
Mr. James Rock, jun., from Hastings.
Mr. J. W. Newman, from Walsall.
Mr. Leoni Levi, for Hull Chamber of Commerce.
Mr. Christian Allhuson, from Newcastle.
Mr. F. Filliter, from Wareham.
Mr. Malcolm Ross, V.P. Manchester Commercial Association.
Henry Ashworth, Esq., from Manchester.
Mr. J. Plowman, from Oxford.
Mr. W. Jollie, from Edinburgh.
Mr. S. Lovejoy, from Reading.
Mr. W. Crosskill, from Beverley.

Mr. Charles Knight, Mr. Thomas Winkworth, and Dr. Booth, F.R S.

Mr. Thomson Hankey, late Governor of the Bank of England, said, he had been requested to introduce to his Lordship the object which the deputation had in waiting upon him. He begged leave, however, first to mention, that he held in his hand an apology which had just been received from the Lord Mayor, expressing his extreme regret that public business detained him in the City, and prevented him from forming part of a deputation whose object he had warmly at heart. Letters had also been received from Sir John S. Pakington, Bart., M.P., expressing his regret that his position as Chairman of the Rye Election Committee prevented his attendance; from Mr. Forbes Mackenzie, M.P.; Captain Gladstone, M.P.; and other gentlemen, to the like effect. Mr. Hankey then explained at some length the views of the Association. He wished to call his Lordship's attention to this very striking feature in the postal statistics of the Colonies and the mother country;—that at the present moment the whole of the letters sent from England to the Colonies did not amount to above one per cent. of the entire number which passed through the Post-office. If he were correctly informed, the total number of letters in the year was estimated at about four hundred millions; and of this number, only about four millions were, during the past year, sent to the Colonies. When his Lordship recollected the immense extent of the Colonial empire of this country, the great development of commercial intercourse which had recently been witnessed, and the fact that there was scarcely a parish in the United Kingdom some of whose inhabitants had not relatives or friends in one of the Colonies;—when his Lordship recollected all this, and connected with it the fact which he had just mentioned, he could hardly fail to be convinced that there must be some radical defect in the Colonial Postage system. The deputation were anxious to suggest to his Lordship, that as one penny was put down for the receipt and arrangement of letters here, and another penny for delivery in the Colony—to both of which he believed Lord Canning had assented—so another penny would give 300*l.* per ton for carrying letters to any part of the world. This was so large a payment to the Government for undertaking what was indeed of the utmost importance, that he hoped the boon would at once be conceded. He believed that if it were granted it would lead to an immense increase of colonial postal communication; he even thought it probable that the increase would be far larger in proportion than that which had taken place in this country. Considering the extension of emigration, and of our commercial relations with every part of the world; considering that the principles of free trade could not be fully carried out unless the utmost power was given of communicating knowledge, of sending samples, books, information of every kind, and on every subject, from one part of the British empire to another. The deputation felt that this was a serious matter for the deliberation of the Government, and they hoped that this view would be concurred in by his Lordship.

Mr. Hume, M.P., referred to the great success of cheap postage here and in the United States. He was confident that, when a uniform rate of postage was established between the mother country and the Colonies, other nations would adopt it; at present, when any demand was made for a reciprocity of cheap postage, the answer was, "Let England set the example with her own Colonies." The country had a great work to do in the diffusion of civilisation and commerce. He wished to see the Colonies placed on the same footing as the Channel Islands, and the sea postage of a penny, if adopted, would carry out the principle of a penny postage to their remotest possessions. He considered that the best and the cheapest means of promoting intercourse with other countries, and extending trade and civilisation. Unless the circulation was complete and perfect, the health of man was not in a satisfactory state; and it was so in the body politic, and they would never have the principle of free trade fully carried out until communication was as free and unfettered as possible. They were every year sending from their shores vast numbers of the population, and it was of the greatest importance that they should encourage communication and intercourse between them and those they had left behind. The difficulties and expense of correspondence were such, that, from the moment the emigrants left these shores, they were cut off from all intercourse. He knew of nothing that would estrange them from the mother country more than such a system—(hear, hear)—whereas if they had facilities of communication with their friends at home, it would maintain and retain their feelings of affection for the country they had left. Let postage be as free as possible, and he was satisfied that it would do more to retain the friendly feeling which should exist in the Colonies, than any other means that could be pointed out. On all these grounds—commercial, social, and political—he hoped the Government would give the question its favourable consideration.

Mr. J. Macgregor, M.P., as representing a large constituency, fully concurred in the views and suggestions that had been submitted to the noble lord. He ventured to observe that the United States, although under a different form of government, had the same commercial system, transacted its affairs in the same language, and was intimately connected with this country by association and emigration. He trusted, therefore, that whatever arrangements might be made with those Colonies, the United States would be placed upon exactly the same footing. The population of America had increased tenfold since her declaration of independence, and, as it was the country from which they obtained much of the raw produce of their manufactures, they were connected with it by the most intimate relations.

The Hon. Cecil Lawless, M.P., said the question was one which was anxiously looked to by the people of Ireland. He would impress upon the noble lord that the amount of intercourse between that country and the Colonies was very great, as there were very few emigrants who had not left some friends behind them with whom they were anxious to communicate.

Mr. Milner Gibson, M.P., wished to say one word with regard to those whose interests, both commercially and socially, he had the honour to represent. He thought it was most important, not only with reference to the Colonies, but to foreign countries, that the proposal of the deputation should be adopted, and he would more particularly instance the United States, with which he thought they might at once make arrangements for a uniform ocean postage. As regarded the question of revenue he did not offer any opinion—it was very probable that a large portion of the revenue would be replaced, and it was at least certain that the effect of the present rate of postage was not to give a corresponding increase to the revenue. The probability, on the contrary, was that it sent a great deal of the correspondence through other channels. (Hear.) It appeared to him that the giving increased facilities to correspondence and communication was one of those services which were indirectly beneficial to the nation, and ought not to be considered solely as a matter of revenue.

Mr. Hadfield, M.P. for Sheffield, observed that the whole of his constituency were strongly in favour of a great reduction.

Mr. Ross, of Manchester, said the success of the experiment with the penny postage at home should induce the Government to accede to the present demand without any hesitation. They might rest assured that the agitation would not cease until the boon had been fully conceded.

Colonel Sykes, referred to the case of India, and said, it had been found that as the postage was diminished, the correspondence had largely increased; in that country there were great difficulties in the way of conveying letters to the remote provinces, but as the roads and other means of communication gradually improved, at last such a state of things had been brought about, that it was hoped they would be able to create a large increase in the correspondence by still further diminishing the postage. Within the last three or four months, orders had been sent out to India to reduce the postage in the interior to a uniform rate of 1½*d.* from one extremity of the empire to the other. (Hear, hear.) To give a personal instance of the inconvenience of the present system, he had had forwarded to him by the last mail to Southampton an official book, the postage upon which was no less than 9*l.* 14*s.* (A laugh.) Of course he did not take it; he could not afford to release it. It was not rarely that books and other matters were sent to him by the mails which he was compelled to refuse. Then, with regard to books and papers, there was almost an interdict upon anything published in the English language. There were various important works of scientific associations, such as the Asiatic Society, which were printed there in English, but they could not be sent in consequence of the heavy tax with which they were burdened, independently of the postage. It was only by the kindness of friends that they were able to receive these works, which would otherwise come through the medium of the post.

Another gentleman was about to rise, but

The Earl of Aberdeen rose at the same time and said—I am much obliged to the gentlemen present for their explanation of the reasons that have brought them to the conclusion at which they have arrived upon this subject. In many of these—indeed, in a great proportion of the reasons you have urged—I entirely agree. I admit all the importance which belongs to this question, as connected with the social advancement of the condition of the country; and I think you must admit that the importance of the question has been felt by the Government, when the proposal which has been made to you by the Postmaster-General is considered. I do not feel that I am in a condition to reverse the decision which the Postmaster-General has arrived at. I do not think that I should be acting consistently with my duty if I did so. It is not from any want of respect, I am sure, for the opinions urged by the various gentlemen who have addressed me to-day—far from it. I entertain the highest respect for the opinions they have expressed, but I do not feel that I could, consistently with my duty, reverse that proposal which has been made to you upon the subject. Gentlemen have said that they are ready to admit that a penny should be required for the domestic part, a penny for the colonial part of the expense, and complain of the enormous amount of the ocean part of the postage. Now, I am assured—and I dare say there are many gentlemen present connected with the shipping interest—I am assured that, if any one of them is disposed to undertake the charge of conveying letters, under the usual conditions, at that which they call an enormous amount, the Post-office will be very glad to accept his offer. I do not wish—and, indeed, I am not competent—to enter into the details of a question to which I have not devoted any minute attention; but, so far as I can understand the question as it has been represented to me by the office at the head of which Lord Canning is placed, I cannot say that I am prepared to reverse the opinion he has expressed on this subject.

The deputation then withdrew.

HOME CORRESPONDENCE.

DUTY ON PAPER AS AFFECTING PAPER-HANGINGS.

York.

Sir,—The influence of the paper duty upon the manufacture of paper-hangings must be viewed in special reference to the two branches of the manufacture into which I consider it to be divided, viz.:

1. The low-priced articles, the consumption of which is large and increasing, induced solely by the reduced price at which, by the aid of machinery, they are supplied, and which now find their way into the habitations of the working-classes, affording some degree of tasteful ornament to their abodes at a cost scarcely exceeding that of whitewash or colouring. By the middle classes they are extensively used for bedrooms and attics.

2. The articles whose value is contingent on the quality of the paper itself and the artistic merit exercised on the production of superior patterns, combined with the greater or less degree of expenditure made upon the ingredients used, such as colouring matter, and the number of colours necessary to produce a given pattern or design.

To show the effect of the duty upon the first class of paper-hangings, I will take a ream of paper weighing 300lbs., and being what is technically denominated a self ground, as gray, buff, pink, or blue, as the paper itself having been coloured in the pulp. Now the paper-stainer is paying for this paper *5l.* *15s.* per ream (each ream producing 480 pieces of 12 yards each), or rather the nett cash price is *5l.* *12s.*, *1l.* *19s.* *4d.* of which is Excise Duty, or 55 per cent. on the raw material of the paper-stainer. The wholesale or manufacturers' price of this peculiar description of paper-hangings is 3½*d.* per piece, or *6l.* *17s.* *6d.* per ream, and may be divided thus:

	d.	
Cost per piece of paper, without duty .	1¾	the piece.
For duty	1	,,
For printing and profit	0¾	,,

So that the duty alone is 25 per cent. more than the printer realises for the cost of printing, colours, pattern designers, and the usual expenses attending all commercial operations, including travelling, clerks, &c. The first and most prominent feature of this statement is that as the payment of the Excise duties is made first by the paper-maker, and next repaid to him by the stainer at a very short date, and as the usual period of realising returns on paper-hangings is six, nine, and twelve months, the stainer is necessarily compelled to employ, solely for the benefit of the Government, a much larger amount of capital, with the attendant risk of bad debts upon that amount of capital; or what is frequently a more serious matter, the sacrifice upon patterns that may not be so saleable, and which are eventually sold at a sacrifice of profit and manufacturing charges, but on which the duty has notwithstanding been imperiously demanded. But it will be argued by the advocates of the Excise duty that no benefit can possibly accrue to the public by its repeal, for in the sale of paper-hangings in retail to the public, who buy by the single piece and at per yard, if the duty upon twelve yards is only *1d.*, it will not be possible to make any tangible difference even in a single piece. Granted; but if the working mechanic is paying a tax directly and indirectly of 1½*d.* per piece, even though he buys but four pieces at a time, the Excise laws compel him to pay a tax of 30 per cent. upon the article which his limited means can only command; whereas the wealthy classes, who can afford to purchase the more costly papers, pay scarcely 10 per cent.; and assuming that he does not obtain a remission of *6d.* upon his four or six pieces, yet by releasing the paper-stainer from the payment of the duty, and adding to the productive power of his capital some 40 per cent., you are, by the force of competition alone, supplying to the working classes very superior papers, thus tending to the cultivation of a taste for neatness and comfort in their homes, which essentially aids in the elevation of the social character of a class who will hereafter prove the surest bulwarks of our national defence and the preservatives of our national morality; and the indirect influence upon national industry by the impetus given to this manufacture in the increasing demand for paper, and the concomitants of that manufacture and the immense addition to the demand for labour already existing, can scarcely be estimated. The next gradation of paper used in the manufacture of paper-hangings is a quality averaging in weight 340 lbs. per ream, of very large consumption, and sold to the stainer at *7l.* per ream, the duty on which will be *2l.* *7s.* *1d.*, or 45 per cent. on the raw material of the paper-stainer. A much more costly article is produced, the surface of the paper being grounded with colour, and patterns varying from one to fourteen colours are imprinted by machinery on the continuous web. Although the remission of the duty would not be felt in a nominal reduction of price to the public, yet the demand for labour, directly and indirectly, would be materially affected by relieving the capital of the paper-stainer from the impost to which it is now subjected, thus affording immediate facilities for improving the character and style of his manufacture, and supplying to the public at the present or (as competition would induce) a lower price, a more valuable article. The duty may be considered as essentially imposing a severe restriction (scarcely equalled in any branch of manufacture) upon capital and industry.

The weight of the paper used in this branch of the manufacture may be estimated at an average of 450 lbs., costing *12l.* per ream, the duty being therefore

34 per cent. on the intrinsic value of the paper. This class of papers comprises the most expensive, from 2*s.* per piece up to 7*s.*, or even more, the yard, the value being entirely contingent upon the degree of artistic skill, and the value of the ingredients expended upon the production; and consequently the Excise duty is especially a tax upon art and design, not to say of capital, as many manufacturers of this particular class of paper, doing only a moderate extent of business, pay from 1,000*l.* to 1,500*l.* Excise duty per year. It is in this class of papers that the French paper-stainers have maintained so pre-eminent a position for superiority of taste, design, and execution over the English, forming, as it does, one of the leading manufactures of Paris, as French papers are exported extensively to almost every market in the world; and although subject to a heavy import duty, obtain a large consumption, even in Great Britain. Place at the command of an industrious and scientific paper-stainer a sum of 1,500*l.* per year, to be expended upon design, and let premiums be awarded for the best designs, it will require but a very humble discernment on the part of the public mind to perceive the immense impetus this branch of our manufactures would receive from the remission of the Paper Duty. The French manufacturer being entirely exempt from this impost, is at present quite on the vantage ground in competing with the English. Justice demands that the competition should be conducted with common fairness, and the rivalry of the two nations would result in the general advantage of both.

I have not deemed it necessary to enlarge, in these remarks on the paper-staining business, upon the statistics of the manufacture, but it will be very readily perceived that no branch of the paper trade will receive a greater accession of demand from the repeal of the duty than the article used by paper-stainers.

Yours very truly,
J. G.

BOAT PLUGS.

Sir,—As a supplement to the paper on Lowering Ships' Boats, which was read before the Society of Arts on the 2nd of March, allow me to make a few observations on a subject of almost equal importance, namely, boat-plugs. My object in bringing this subject before the Society is not so much to present anything new, as to direct attention to a simple, efficacious, and inexpensive remedy for an evil, by which, on so many recent occasions, human life has been endangered. The object of "a plug-hole" in a boat, is not, as has been inferred by a leading journal, "to keep, as it were, a standing leak in the bottom," but to afford at all times a ready egress to the rain, to the water which is purposely thrown into the boats to prevent their warping in hot weather, and also to afford a ready discharge for the water on the accidental shipping of a sea, and thus to prevent any accumulation of weight in the boats. That which is essential to the safety of the boat, when hanging at the davits, becomes, unless a plug is at hand to stop the hole, a source of danger when the boat is lowered into the water.

Many plans of "self acting plugs" have been devised, which would allow the water to escape from the inside, but (when lowered) would be closed by the pressure of the water underneath; in all these, however, there was danger of their being fouled by sand or dirt, and also from the warping of the materials of which they were constructed from variations of temperature, and consequently, that in the moment of emergency they might fail to act. The simplest method of stopping a hole is by means of a plug; and it only becomes necessary that a plug properly fitted should at all times be attached to the bottom of the boat, near to the plug-hole, by a lanyard, or a chain. With a remedy so simple, so efficacious, and always at hand on board of ship, it seems marvellous that in so many instances it should have been altogether neglected.

In the case of the *Orion*, John Kelly, seaman, stated, in his evidence, that "I got the boat lowered, and got into it; I could not find any plug in the boat, to fill the hole, which allows the water to run out. The water came in." Edward Hawes, R.N., stated, that "It is the practice in the navy to have the plugs attached by a lanyard to the boats;" but several other witnesses testified that they never saw the plugs fastened. In the case of the *Amazon*, John Lamont stated, "When they got into the boat, they found it was impossible to give any assistance to others, for they shipped two or three seas. The plug was out when she was launched. It was stopped imperfectly with waste, and they had only three oars."

In the case of the *Queen Victoria*, one of the survivors stated, that "On reaching the water, however, it was found the boat was leaking fast, and must have gone down in a short time, were it not for the coolness and presence of mind of a young lad, who having searched with his hand, found that the plug-hole was open, and thrust his fingers into it."

I send you herewith two common bottle-corks; the one prepared as a boat-plug by Mr. James Beeching, the inventor of the Duke of Northumberland's life boat; the other by myself. Bottle-corks are always to be had on board ship, and with a little twine or fine cord a plug may be easily attached to the bottom of the boat, so as to be always in readiness for use; and should the plug be lost, a fresh one can always be got ready with the greatest facility. I am, Sir, yours, &c.,

W. Stirling Lacon.

Union Club, 15th April, 1853.

VENTILATION OF MINES.

Sir,—I beg to call your attention to one or two points on the subject of explosions in mines, not alluded to in the Lecture of last week, and but slightly mentioned in the discussion which followed.

We can only hope to reduce the number of fatal explosions, either by giving the persons subject to such accidents an opportunity of escape by using the best means of indicating the approaching danger, or by removing the cause of the occurrences. The first object has been attained to a great extent by the use of the Davy Lamp; and I should not refer to this part of the subject, but for the omission of any notice of the modification of that ingenious invention by Messrs. Upton and Roberts. This lamp was tested by Dr. Pereira, and found to possess advantages above the ordinary lamp, being unaffected in circumstances fatal to the Davy. Dr. Pereira said that "The lamp Messrs. Upton and Roberts have invented appears a much more perfect instrument than the Davy Lamp; for in all the experiments hitherto made with it, the flame has not passed through the wire gauze." Dr. Turner remarked of this lamp: "Upton and Roberts have constructed a lamp through which I have in vain tried to cause the communication of flame, and which appears to me perfectly secure." The Society of Arts awarded a premium to Mr. Roberts for his improvements.

To accomplish the removal of the carburetted hydrogen, and the ventilation of mines, various plans are in use. 1. The natural mode, now almost universally discountenanced. 2 Causing a draught through the mine, by heating the air in one shaft, or one division of a shaft. 3. The use of a fan, on Mr. Brunton's plan. 4. Mechanical pumping, or exhausting. Of one plan of this kind (Struve's), a diagram was suspended in the room, but not explained to the Meeting. 5. Jets of high-pressure steam.

The furnace seems the favourite mode of ventilation, doubtless from its general efficiency, and the facility of application, the fuel being on the spot. It appears, however, that increase in the firing does not, beyond a certain limit, give a corresponding increase of draught through the mine, and hence the advisableness of more powerful means. The plan suggested by Mr. G. Gurney possesses the advantage of unlimited application. In 1835 that gentleman stated, " A mine of ten miles might have the whole of the air contained in it, taking the galleries to be five feet square on an average, driven out and filled with fresh air *every fifteen minutes*, let the area of the shafts be the smallest now sunk,—such is the singular power of the steam draught." In the year 1849 some of the most eminent scientific men of the day gave evidence before a Parliamentary Committee, approving of the plan; and the opinion was corroborated by practical viewers, one of whom stated that, " He had previously two upcast shafts appropriated to ventilation; in consequence of the introduction of the steam-jet he had obtained 85,690 cubic feet per minute, and had quite sufficient ventilation with one shaft only." And another gave evidence to the effect, that the use of the steam-jet nearly doubled the strength of the current in the particular mine to which he alluded, the furnace giving 48,948 cubic feet per minute, the steam-jet 95,984 feet.

If there exists a lamp so safe as the one stated, and a plan of ventilation so simple and effective as Mr. Gurney's, a very blameable indifference to human life must prevail among colliery owners, to allow of so many accidents occurring annually. Surely they should be held responsible for the lives of those in their service, and their acquital should depend upon the proof that the best means of obviating accidents, and obtaining thorough ventilation adapted to the particular case, had been employed to the satisfaction of the Government Inspectors.

I confess I do not perceive any great advantage from Mr. Ikey's plan; he might remove the carburetted hydrogen, but at the same time he would form carbonic acid gas, equally fatal to the miner, and, being heavier than atmospheric air, all the more weighty to lift from the mine.

Yours, W. S.

TREATMENT OF FLAX.

SIR,—Your Journal of the 8th inst. contains a digest of Professor Wilson's interesting Paper on " The Preparation and Treatment of Flax," lately read before the Society, and also refers to some remarks subsequently made by me in reference to it. My observations were necessarily hasty and imperfect, being unwilling longer to occupy the attention of the meeting towards the close of a somewhat lengthened sitting. Perhaps, therefore, you will allow me to explain a little more fully than I could do on that occasion, what appears to me to be the real position of what is now commonly designated " the Flax question."

Without referring to all the various methods of steeping or retting flax in the state of straw, which have been practised or propounded from time to time, I think I may fairly place them all in one category, as based on the same principle of treatment, and range them under the term " wet processes," (according to Professor Wilson), against one of essentially different principle, which has been styled the " dry process," and which consists merely in separating, by mechanical means, the fibrous from the ligneous portions of flax straw, taken as it is pulled from the ground, with the exception of its being dried. Now I entirely agree with Professor Wilson that yarns spun from flax or fibre in this state would not be suited for fine fabrics, and that goods manufactured from it would be liable to fermentation, and consequent decay. But he labours under a mistake, as I endeavoured to show him, if he imagines that flax fibre separated mechanically by this "dry process," is incapable of being subsequently treated chemically, or that it may not be rendered very superior both in colour and quality to flax prepared by any of the " wet processes " before referred to, not excepting that of Watts or Buchanan. I pointed out the badness of colour in the samples which he produced as the result of Watts's plan; and I ventured to express an opinion, founded on extensive observation and experience, that all flax steeped or steamed in a state of straw would prove defective in this respect, and consequently difficult and expensive to bleach.

What might be the cost of plant necessary for carrying into effect either Watts's or Buchanan's process on a large scale, Professor Wilson has not sufficiently informed us; but I have no hesitation in saying, that independent of this outlay (which must be considerable), the cost of steaming or soaking in hot water any considerable quantity of so bulky an article as flax-straw, would prove highly disadvantageous in comparison with the total expense of the " dry process," combined with suitable and proper after chemical treatment. But, in addition to the cost of plant, and the cost of steaming or soaking under these new "wet processes," must be reckoned the very heavy expense of transporting the flax-straw from the farms to the steaming-works; unless, indeed (which I can hardly think likely), the advocates of these systems expect that the farmers will themselves erect the necessary works, and steam their flax as they now steam their turnips. Even in that case they would still have to provide for the subsequent scutching of their flax, a very tedious and troublesome process.

As a grower of flax, and having had extensive opportunities of obtaining information among flax-growers in Ireland and in Belgium, as well as in this country, I am persuaded that what is chiefly wanted and desired by them is a cheap, light, and simple machine, by means of which they may reduce the bulk of their flax-straw; separate the fibre, so as to sell it, in a partially cleaned state, to some flax-factor or preparer; and be able to retain upon their farms, either as food for cattle or for purposes of manure, the boon, or shove, which forms about three-fourths of the weight of the flax-straw. My attention has for some time past been directed to the construction of such a machine, and to an entirely new method of treating flax after it has been thus operated upon mechanically. This new system of flax preparation I purpose designating the "fibre process." With what success I have prosecuted my object, I hope to make manifest so soon as I have completed the requirements for a patent, which are in course of fulfilment.

I am, Sir, yours respectfully,
EDWARD DAVY.

Flax Works, near Crediton,
April 20th, 1853.

PROCEEDINGS OF INSTITUTIONS.

BARNET.—A second Concert of sacred music, in aid of the Building Fund of the Barnet Institute, was given at the Town-hall on Monday, the 18th inst; Mrs. J. Roe, Mrs. W. Dixon, and Messrs. J. and G. Brooks being the principal singers. The performance, which gave much satisfaction, was under the direction of Mr. T. Brooks, who presided at the organ with great ability. The hall was well filled.

BASINGSTOKE.—On Thursday and Friday evenings, two Lectures were delivered in the Town-hall, by Mrs. Balfour, to the members of the Mechanics' Institute, "On Contrasts and Parallels in the Lives of Celebrated Women, at the Times of great Revolutions in England, America, and France," and "On Home Influence and Early Impressions." The characters especially noticed in the former lecture, in connection with the great revolution and the Restoration in England, were Mrs. Hutchinson, Lady Fanshawe, Lady Russell, and Mrs. Bunyan; with that in America, Mrs. Washington and Mrs. Baith; and with that in France, Madame Rolande, Charlotte Corday, and Madame de Staël. The attendance on both occasions was large, and the deepest interest and attention were paid to both discourses.

BATTLE.—On Monday evening, Mr. E. Rowse delivered a Lecture at the Mechanics' Institution, on the subject, "Where am I?" The lecture embraced a glance at the aspect of our times, the progress of the physical sciences, recent revelations in astronomy, physical geography, geology, and physiology; and concluded by pointing to the triumph of mind over matter. The lecture was listened to with much attention, and was illustrated by numerous drawings and a map of the world. A vote of thanks was moved at the conclusion by the Rev. E. Parry, and carried by acclamation.

BEDFORD.—On Wednesday evening, March 30th, W. Hughes, Esq., F.R.G.S, gave a Lecture to the members and friends of the Literary and Scientific Institution, "On Volcanos and Earthquakes." T. H. Barker, Esq., M.D., Vice-president, took the chair; and at the close presented the thanks of the audience, which was more numerous than usual, to Mr. Hughes for his excellent lecture. On the 12th and 13th inst., George Barker, Esq., gave two Musical Lectures at the Institution. Many of the illustrated songs were encored. It was Mr. Barker's third visit to the Institution.

DOVER.—The seventeenth annual meeting of the Museum and Philosophical Institution was held on the evening of the 5th inst., at the Lecture-room of the Museum; the Rev. William Yate, of St. John's, Dover, one of the Vice-presidents, in the chair. The Honorary Secretaries, Messrs. Rees and Phillips, presented the Report of the last year, which congratulated the Society on its increasing prosperity, and its union with the Society of Arts, London, and from which they had already received twenty-two publications, &c., and several circulars, containing valuable suggestions. The union being an era in the Society, a brief retrospect of its rise and progress from 1836 was given. The lectures during the session had been well attended; and it was hoped next session that lecturers from the Society of Arts would be made available. There had been several valuable presentations to the Museum, during the last year, of insects, minerals, fossils, shells, the sword of Oliver Cromwell, &c. The library had received an addition of ninety-five volumes. The number of members was 180. The treasurer's account showed a balance of 7*l.* 15*s.* in favour of the Society. The committee deeply regretted the loss by death of their President, Dr. Soulby, M.D., who was elected in 1847, and had rendered essential services to the Institution; and they recommended the appointment of Dr. Astley, M.D., of Dover, as his successor, who was unanimously elected. The officers for the ensuing year were then appointed, and a ballot taken to fill up the vacancies of the six retiring members of the committee. A vote of thanks was then passed to Mr. Phillips for his services as honorary assistant secretary, and also one to the Chairman.

NEWBURY.—The tenth annual meeting of the Members of the Literary and Scientific Institution was held in the library on Tuesday evening, the 5th inst.: the chair was occupied by Mr. Joseph Bunny, M.D. The treasurer's account showed that there had been an excess of income over expenditure during the past year of 14*l.* 18*s.* 9*d.*; though 7*l.* 4*s.* had been expended for the museum, and 43*l.* 16*s.* 2*d.* in the purchase of 188 volumes of books. The total number of volumes now in the library is 2,096: the books taken out for perusal and returned to the library, during the year, were 4,545. The Report then refers to the Union of Institutions, and in speaking of the general interchange of privileges, says: "About 120 Institutions have agreed to this interchange; so that any gentleman in this room may feel that in his ticket of admission here, he may carry with him to 120 other places (stranger though he be) a letter of introduction to literary friends. Our Institution is thus become one of the links in a great chain of mutual courtesy and mutual improvement." A rule excluding all excepting the guinea subscribers from holding offices of control, or of voting for officers of the Institution, has been so far relaxed, that all members, irrespective of the amount of their subscriptions, have a vote for the election of officers. The Report of the Committee of the Reading-room stated that an expense of 39*l.* 0*s.* 10*d.* had been incurred for this object; the amount of subscriptions received being 37*l.* 6*s.* The largest number of subscribers amounted to ninety-five, of whom sixty were members of the Institution. The following gentlemen were chosen Directors for the ensuing year:—Messrs. Blacket, Canning, Hanson, A. Kimber, H. Mason, S. Palmer, H. Wiglesworth, Adnams, Hickman, Royston, Randall, and Vines. Mr. G. Barnes was re-elected Secretary; Mr. T. W. Fielder, Treasurer; Mr. W. J. Cowper, Librarian; and Mr. J. W. Roake was chosen Curator.

TO CORRESPONDENTS.

Notice.—Members, and others, who can furnish or obtain original information or suggestions on the subjects included in the Society's Premium-list, or other topics connected with the Society's various departments of operation, are invited to communicate the same to the Secretary, in as condensed a form as possible, for the purpose of being either read and discussed at the evening meetings, or inserted in the Society's weekly Journal. Anonymous letters cannot be attended to. All communications, whether the author's name is to appear or not, must be accompanied by the writer's name and address.

Members of the Society who do not receive the JOURNAL regularly, are requested to give immediate notice to the Secretary; and, in order to prevent mistakes, they are particularly requested to signify any change which they desire to have made in their address, with as little delay as possible.

"*A. C.*" should read Captain Huish's pamphlet, "On Railway Accidents."

"*J. S., Islington,*" will find the list he requires in Dr. Hudson's "Treatise on Adult Education," published at Longmans.

MISCELLANEA.

Mine Ventilation.—At the last monthly meeting of the North of England Institute of Mining Engineers, the subject of discussion was the relative merits of the Furnace and the Steam-jet in the ventilation of coal-mines. Mr. Nicholas Wood, the President, detailed the results of a series of experiments which he had made, with a view of ascertaining whether the steam-jet was useful as an auxiliary or not, because up to the point at which the furnace and the steam-jet acted together, or were of equal power, the furnace was unquestionably the most effective and economical of the two. The question was, whether after that the jet was an auxiliary to the furnace or not, and if so, to what extent it was useful or beneficial. He had ascertained, as might have been expected, that when the jet was applied to a current of air moving at a very great velocity, its application as a mechanical power became proportionably less; and when the velocity reached the extreme limit of the furnace, the steam-jet was scarcely able to follow the air: in fact, it rather opposed it, and the air had to drag the steam after it. There could be no doubt that an efficient auxiliary to the furnace was exceedingly desirable in a mining point of view in certain cases. With reference to that point, there was now erecting in South Wales, by Mr. Struvé, a very powerful machine, the piston of which was about twenty feet in diameter, and calculated to pump out about 10,000 cubic feet of air in each stroke. Both Mr. N. Wood and Mr. Stephenson agreed that steam employed in working such a machine was likely to be much more effective than when blown out of a jet. Mr. Stephenson thought the steam-jet a misapplication of force, which had arisen from a mistaken view of the cause of the efficiency of the steam-blast in locomotive engines. If the steam-jet were applied in a tall chimney, it would be of no use whatever; it would not then be in an energetic state, and all its force would be expended on the elasticity of the air in a very few feet.

PARLIAMENTARY REPORTS.

SESSIONAL PRINTED PAPERS.

Par. No. *Delivered on 12th April.*

108. Superannuation Abatements, &c.—Return

Delivered on 13th April.

287. Pilotage (Cinque Ports)—Account.
294. Rochester Cathedral—Copy of Minutes.
308. Education—Minute of the Committee of Privy Council.
315. Crown Solicitors (Ireland)—Treasury Minute, &c.
320. Consolidated Fund and National Debt Redemption Acts—Resolutions and Orders of the House of Commons.
Pleuro-Pneumonia in Cattle—Papers.

Delivered on 14th April.

191. Local Acts—Reports of the Admiralty.
217(1). Blackburn Election—Index to Minutes of Evidence.
297. Spirits—Accounts.
314. Guano—Return.
316. National Debt—Account.
326. Bills—Aggravated Assaults (amended).
328. „ —County Election Polls (Scotland)—amended.

Delivered on 15th April.

290. Maldon Election—Minutes of Evidence.
295. Lighthouses—Return.
299. Shipping—Returns.
300. Receipt-stamps—Return.
303. Diplomatic Service—Return.
317. Sir James Brook—Sir J. Pakington's Despatch.
318. Public Income and Expenditure, Imports, &c.—Accounts.
319. British Museum—Estimate, &c.
Turnpike Trusts—Reports of the Secretary of State.

Delivered on 16th and 18th April.

303. Diplomatic Service—Return (a corrected copy).
333. Lieutenant Engledue—Copies of Memorials.
334. Election Petitions—Alphabetical List.
335. Public Income and Expenditure (Balance-sheet)—Account.
191. Local Acts—Reports of the Admiralty.
292. Sale of Beer—Reprints of Reports from Select Committees.
323. Lunatics—Returns.
343. Dockyard Appointments—Copy of Letter, &c.
327. Bill—South Sea and other Annuities Commutation.
Revenue, Population, Commerce, &c.—Tables, Part 20.

Delivered on 19th April.

259. New South Wales, &c.—Return.
Ecclesiastical Commission (Brecon Collegiate Church)—Copies of Memorandum.

Delivered on 20th April.

288. Metropolitan Commission of Sewers—Account.
296. Duchy of Lancaster—Account.
324. Mercantile Marine Fund—Account.
325. Troops, &c., at Polling Places (Ireland)—Return.
359. Private Lighthouses—Return.
289. New Windsor Election—Minutes of Evidence.
362. Bills—London and Edinburgh Gazettes.
363. „ —Oaths in Chancery, &c.—Lords' Amendment, &c.

PATENT LAW AMENDMENT ACT, 1852.

APPLICATIONS FOR PATENTS AND PROTECTION ALLOWED.

From Gazette, 15th April, 1853.

Dated 26th March.

726. R. Hazard—Apparatus for bath and lavatory purposes.

Dated 31st March.

771. J. Rylands—Yards and spars of ships.
773. G. Hanson and D. Chadwick—Measuring gas and water, applicable to obtaining motive power.

Dated 1st April.

775. G. F. Wilson—Night-lights and cases.
776. G. F. Wilson—Treating oily matters.
777. B. Brittain—Supporting bedsteads.
779. W. Crofts—Weaving.
780. J. Saunders—Railway tyres.
781. H. Spencer, H. Tattersall, and H. Simpson—Preparing and spinning cotton, &c.
782. R. E. Peterson—Improved piston. (A communication.)
783. G. F. Wilson—Manufacture of cloths, and preparation of wool.
784. G. F. Wilson—Treating greasy matters, and manufacture of candles.
785. G. F. Wilson—Night-lights, and apparatus for same.

Dated 2nd April.

787. G. Holcroft and W. Hoyle—Steam-engines.
788. G. Robb—Manufacture of sulphuric acid, &c.
789. N. F. Barthelemy—Sharpening razors.
790. A. R. Snelling—Emigrants' habitation cart.
791. C. G. Rosenkilde—Window-sash fastenings.
792. F. W. Mowbray—Doubling wool, &c.

Dated 4th April.

793. W. E. Newton—Engines by air or gases. (A communication.)
794. J. Findlow—Beds for the sick.
795. J. Palin—Evaporation and distillation.
796. W. E. Newton—Production of plates for embossing or printing, surfaces bearing devices, &c. (A communication.)
797. W. B. Johnson—Steam-engines.
798. R. W. Sievier and J. Crosby—Looms.
799. J. Ross and T. R. H. Ross—Machinery for combing wool, &c.
800. G. H. Brockbank—Horizontal pianofortes.
801. W. Walker—Drying malt.
802. M. Poole—Winding silk from cocoons. (A communication.)
803. F. Stiegewald—Manufacture of glass and porcelain.
804. C. May—Machinery for manufacturing and rolling iron.
805. F. Stiegewald—Heating furnaces.
806. A. Burq—Electro-galvanic apparatus for medical purposes.
807. J. Lawson—Suspension of ships' boats.
808. A. V. Newton—Self-inking stamping apparatus.

Dated 5th April.

810. W. Mavity—Manufacturing letters for type, and lettering for sign-boards, &c.
812. G. Purcell—New method of adjustment in printing, by means of certain combinations of different-sized spaces and quadrats.
814. J. Long—Setting up and adjusting ships' rigging.
816. J. Haley—Steam hammer.
818. W. Johnson—Weaving. (A communication.)
820. J. Thomas—Manufacture of gas and coke.

Dated 6th April.

822. E. Simons—Telegraphing.
824. J. J. Pratt—Improvements in stockings.
826. H. A. Jowett—Apparatus for heating generally.
828. W. Johnson—Ornamental surfaces in glass, &c. (A communication.)
830. S. Denison and H. D. Denison—Rating, breaking, &c., flax, &c.

Dated 7th April.

832. W. A. P. Aymard—Preparation and manufacture of candles, &c. (A communication.)
834. J. Grist—Machinery for manufacture of casks, &c.
836. W. H. Wells, E. Mann, and J. Harman—Grinding wheat and other grain.
838. C. Mather—Power looms.

840. F. Le Mesurier—Apparatus for measuring and indicating a given period of time.
842. C. Nickels—Machinery for masticating, kneading, &c., India-rubber and other matters.

WEEKLY LIST OF PATENTS SEALED.

Sealed 14th April, 1853.

405. Allan Edwin Hewson, of Birmingham—Invention of certain improved modes or processes for making buttons, beads, and other ornaments of dress.

Sealed 16th April.

421. Charles Reeves, jun., of Birmingham—Improvements in the manufacture of knives.
422. George Randsfield Tovell, of Mistley, and John Mann, jun., of Colchester—Improvements in the construction of ships and other vessels.
429. William Harcourt and Joseph Harcourt, of Birmingham—Improvements in the construction and manufacture of match-boxes.
436. Robert Mole and Robert Mole, jun., of Birmingham—Improvements in the manufacture of swords and hatchets.
444. Gabriel Benda, of Basinghall-street—Improvements in apparatus for obtaining fire for smokers.
454. Charles Clarke, of 43, Preston-street, Brighton, and John Gilbert, of 10, Hyde-place, Hoxton—Improvements in the supply and distribution of water and other fluids.
462. Jacob Tilton Slade, of Pall-mall—Invention of an improved hoisting apparatus.
470. William Lukyn, of Broad-street, Nottingham—Invention of a liquid draught detector, or self-measuring tube, with a union conveyance tap, and its stock and time-table.
473. Julian Bernard, of Guildford-street, Russell-square—Improvements in the production of ornamental surfaces upon leather.
486. Julien Boilesoe, of 4, North-terrace, Brompton—Invention of an improved mode of preserving vegetable substances and animal coatings.
495. David Crichton, of Manchester—Invention of arrangements and apparatus for producing continuous circular motion, giving a series of different velocities obtained from alternate motions, applicable to looms and other machines.
504. George Kennedy Geyelin, of Camden-town—Invention of an improved machine for grinding pigments or other vegetable or mineral substances.
547. James Henry Smith, of Connaught-terrace—Improvements in corsets.
302. William Brown, of Birmingham—Improvements in the construction of metallic bedsteads.
305. Philip Webley, of Birmingham—Improvements in repeating pistols and other fire-arms.
375. George Lee Lysuar, of 85, Park-street, Grosvenor-square—Improvements in swivel-hooks and such-like fasteners.
395. Alphonse Rene le Mire de Normandy, of Judd-street—Improvements in the manufacture of articles made of gutta percha. (Partly a communication.)
406. Edouard Sy, of 17, Clifford-street, Bond-street—Improvements in bookbinding.
422. Isaac Frost, of 49, Tavistock-terrace, Upper Holloway—Improvements in reaping or cutting crops.
428. Henry Noad, of 7, Langthorn-street, Stratford, Essex—Improvements in treating corn or grain, and obtaining products therefrom.
446. Benjamin Barton, of Old Kent-road—Invention of an improved bath, which can also be used as a life-boat.
448. John Davie Morries Stirling, of Larches, near Birmingham—Improvements in the manufacture of wire.
450. James Hudson, of Halifax, Yorkshire, and Thomas Bamford Hudson, of Malton, Yorkshire—Improvements in the manufacture of bricks, tiles, and drain-pipes or tubes.
404. William Spence, of 50, Chancery-lane—Improvements in machines for thrashing and winnowing corn and other agricultural produce. (A communication.)

Sealed 19th April.

439. John O'Leary, of Liverpool—Invention of certain improved apparatus for indicating the number of passengers entering in or upon omnibuses, and also their exit therefrom.
445. Thomas Bell, of Bristol, and Richard Chrimes, of Rotherham, Yorkshire—Improvements in valves, applicable to the receiving and discharging of water or other fluids.
449. William Wilkinson, of Nottingham—Improvements in the manufacture of ropes, bands, straps, and cords.

Sealed 20th April.

461. Thomas Henry Biddles, of Mansfield-road, Nottingham, and John William Duphrato, of Radford, Nottingham—Improvements in machinery for the manufacture of textile and looped fabrics.
535. James Coury, of Manchester—Improvements in umbrellas and parasols.
607. Francis Daniel, of Camborne, Cornwall—Improvements in stamp-heads.
631. Harrison Blair, of Colthurst, Mitten, Yorkshire—Improvements in apparatus for supplying steam-boilers with water.
728. George Stenson, of Northampton—Improvements in apparatus for separating gold from auriferous sand and earth.
730. George Philcox, of 3, Winchester-buildings—Improvements in marine chronometers and other timekeepers.
731. Edward Davy, of Crediton—Improvements in the preparation of flax and hemp.
743. Peter Forbes, of Shettleston, Lanark—Improvements in sowing or depositing seeds in the earth.
780. James Potter, of Manchester—Improvements in machinery for spinning cotton and other fibrous substances.
811. Benjamin Walker and William Bestwick, of Salford, Lancashire—Improvements in the manufacture of braid, and the machinery or apparatus employed therein.
949. John Bethell, of Parliament-street, Westminster—Improvements in machinery or apparatus for digging and cultivating land.
986. James Norton, of Ludgate-hill—Invention of an improved mode of transmitting motive powers.
1082. Archibald Slate, of Woodside Iron-works, near Dudley—Improvements in propulsion.
1083. Archibald Slate, of Woodside Iron-works, near Dudley—Improvements in the production of motive power from elastic fluids.
1084. Archibald Slate, of Woodside Iron-works, near Dudley—Improvements in propelling vessels.
1085. James Dunlop, of Haddington, N.B.—Improvements in saddles.
1090. Archibald Slate, of Woodside Iron-works, near Dudley—Improvements in the arrangements for working the slide-valve for the induction and eduction of fluids.
1091. Archibald Slate, of Woodside Iron-works, near Dudley—Improvements in steam-boilers.
1146. Nicolas Malinan, of Bordeaux, and 39, Rue de l'Echiquier, Paris—Improvements in stopping or covering bottles, decanters, pots, and other receptacles of glass, porcelain, and earthenware, and in the machinery connected therewith.
161. Louis Jules Joseph Malegue, of Paris—Invention of a certain colouring composition, for dyeing tissues or stuffs of silk or cotton.
243. David Stephens Brown, of 2, Alexandrian-lodge, Old Kent-road—Improvements in barometers, part of which invention is applicable to the registry of other fluctuations than those of barometers.
379. William Edward Newton, of 66, Chancery-lane—Improvements in apparatus to be employed for veneering surfaces. (A communication.)
415. Matthias Walker, of Horsham—Improvements in vessels or apparatus for containing and preserving ale, beer, and other liquors.
429. Nathan Dutton, of 31, Great George-street, Liverpool—Improvements in the manufacture and application of dowels, and machinery connected therewith, parts of which machinery are applicable to other purposes.

WEEKLY LIST OF DESIGNS FOR ARTICLES OF UTILITY REGISTERED.

Date of Registration.	No. in the Register.	Title.	Proprietor's Name.	Address.
April 14	3446	Buckle	Frederick John Jones	Addle-street, City.
,, 15	3447	Writing-case and Taper-stand	John Simons	Birmingham.
,, ,,	3448	Apparatus for suspending or hanging Pictures	Simcox, Pemberton, and Sons	Birmingham.
,, ,,	3449	Stay-fastening	Joshua Harper	9, St. Andrew's-street, Cambridge.
,, 16	3450	Improved Crowbar	Joseph Lee and Co.	94, Dale-end, Birmingham.
,, ,,	3451	Davies' Ladies Supporter	Wm. Griffith Davies	Hill-street, Bideford.
,, 19	3452	The Emigrant's Companion	Thomas Youngs	87, High-street, Poplar.
,, ,,	3453	Chimney Valve Seat	W. Pope and Son	81, Edgeware-road.